

Solar Energy in North Carolina:

Policy, Installed Solar, Land Use, and Decommissioning

Chairman Edward S. Finley, Jr.
North Carolina Utilities Commission

Outline

- Introduction to the North Carolina Utilities Commission
- Renewable Energy Concepts
- State Policies:
 - North Carolina Renewable Energy and Energy Efficiency Portfolio Standard (REPS)
 - Solar Tax Incentive
- Installed Solar
 - Required under REPS
 - QF Generator Reports
 - NC-RETS Data
- Solar Land Use
- Decommissioning Plans



North Carolina Utilities Commission



- An agency of the State of North Carolina created by the General Assembly to regulate the rates and services of all public utilities in North Carolina
 - Oldest regulatory body in state government
 - Evolved from the Railroad Commission which was created in 1891 and given authority to regulate railroad, steam boat, and telegraph companies
- Regulates electric, telephone (including payphone service and shared tenant service), natural gas, water, wastewater, water resale, household goods transportation, busses, brokers, and ferryboats
- To a limited degree, regulates electric membership corporations, small power producers, and electric merchant plants

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Renewable Energy Concepts



- A “renewable portfolio standard” (RPS) is a policy tool that requires retail sellers of electricity to obtain a portion of their electricity portfolio from renewable resources
- A “renewable energy certificate” (REC) is a tradable instrument equal to one unit of energy derived from a renewable energy resource

Renewable Energy Concepts

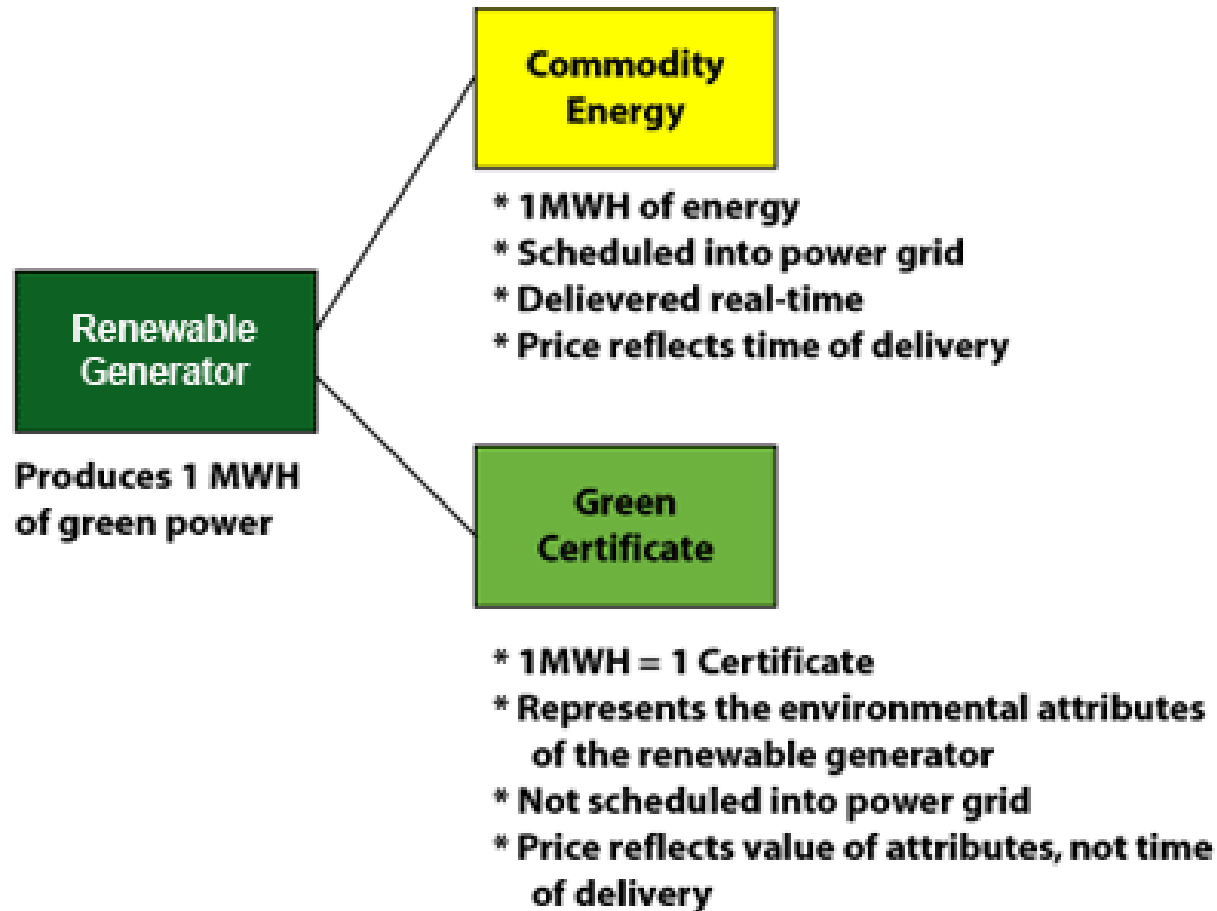


Image source: www.greenpowermarkets.com

State Policies: Renewable Energy Tax Credit



- G.S. 105-129.16A - Tax credit equal to 35% of the cost of eligible renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year
 - A maximum of \$10,500 per installation for residential PV systems or solar-electric systems
 - A maximum of \$2.5 million per installation for solar facilities used for a business purpose
- The allowable credit may not exceed 50% of a taxpayer's state tax liability for the year, reduced by the sum of all other state tax credits
- The tax credit expires at the end of 2015; Session Law 2015-11 provides a safe harbor which extends the credit until January 1, 2017, if certain conditions have been met

State Policies: Renewable Energy and Energy Efficiency Portfolio Standard (REPS)

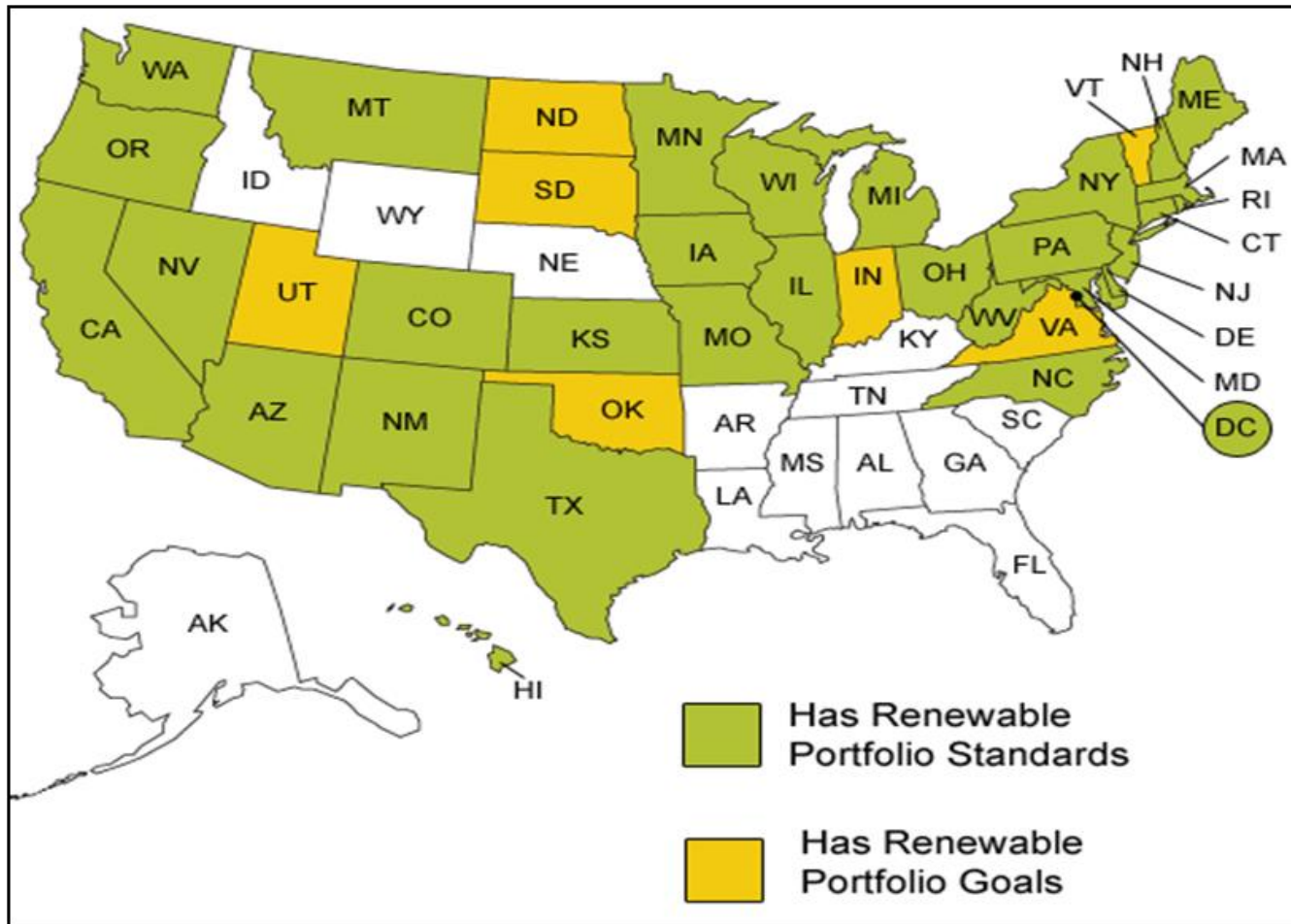


Image source: U.S. Energy Information Administration, available at www.eia.gov

State Policies: REPS Solar Set-Aside Requirement

- Solar set-aside requirement, G.S. 62-133.8(d):

Year	% of Prior Year's Retail Sales
2010-2011	0.02%
2012-2014	0.07%
2015-2017	0.14%
2018-	0.2%

- Each electric power supplier appears to have met its solar set-aside requirements from 2010 -2014

REPS Solar Requirement

Company	Estimated 2017 Retail Sales (MWh)	Estimated REPS Required Solar Set- Aside RECs (0.2% in 2018)	Estimated Required Capacity (assume 20% capacity factor)	Current Installed NC Solar Capacity
Duke Energy Carolinas (DEC)	61,310,836	112,622	70 MW	220 MW
Duke Energy Progress (DEP)	39,363,788	78,728	45 MW	484 MW
Dominion NC Power (DNCP)	4,327,149	8,654	5 MW	108 MW
Total	105,001,783	210,004	120 MW	812 MW

Installed Solar Capacity: QF Generator Reports

Company	All Solar PV Projects	0-10 kW (residential)	>10kW (non-residential)
DEC	1,553 projects 220 MW	1,343 projects 5 MW	210 projects 215 MW
DEP	1,777 projects 484 MW	1,530 projects 6 MW	247 projects 478 MW
DNCP	46 projects 108 MW	30 projects 1 MW	16 projects 107 MW



Solar Projects in the Interconnection Queue

DEC: 258 solar PV projects in various stages of development, but not operating, totaling 640 MW (as of March 31, 2015)

DEP: 317 solar PV projects in various stages of development, but not operating, totaling 2,190 MW (as of March 31, 2015)

DNCP: 121 solar PV projects in various stages of development, but not operating, totaling 696 MW (current)

NC-RETS REC Tracking System

- Currently 956 registered projects in NC-RETS.
 - 408 are solar photovoltaic projects.
- Number of RECs and Solar RECs issued (by vintage year):

Year	RECs Issued	Solar PV RECs Issued	Solar % of total RECs Issued
2008	1,062,494	300	0.0%
2009	1,495,282	5,424	0.3%
2010	1,748,687	23,326	1.3%
2011	3,009,675	54,016	1.7%
2012	4,029,405	134,682	3.3%
2013	5,422,284	405,631	7.5%
2014	5,860,341	823,723	14.1%

Land Use



- NREL Study – Estimates for utility scale solar facilities (>1MW) that approximately 8 acres/MW_{AC} is required.
 - Land-Use Requirements for Solar Power Plants in the United States, available at www.nrel.gov/publications
- Clearinghouse Review of CPCN Applications:
 - The Department of Agriculture has raised concerns over the loss of farm and forest land due to solar installations
 - Nevertheless, the Department of Administration has determined that no further action is needed for compliance with the North Carolina Environmental Policy Act and has not recommended that the CPCN be conditioned or denied based on this concern

Decommissioning

The background of the slide is a dark blue banner. On the left, there is a faint, light blue Great Seal of the State of North Carolina. On the right, there is a silhouette of the state of North Carolina in a lighter blue color, with a solar tower (heliostats) superimposed on it, emitting a warm orange glow.

“Predominantly, we have not been asked to put decommissioning bonds down. We've been able to effectively show that the raw materials, recyclable materials, exceed the amount of decommissioning bond. But we do have a decommissioning plan that goes in place. For the most part, steel beams, everything on the site, is recyclable without exception. It's real easy. It's post driven in the ground. You just pull them up, it goes back to farmland. There's no concrete poured, or anything, to really tear up or destruct.” - Testimony of Bradley Fite on behalf of Windsor Hwy 17 Solar, LLC, Docket No. SP-4655, Sub 0

Decommissioning

The background of the slide is a dark blue banner. On the left, there is a faint, light-colored Great Seal of the State of North Carolina. To the right of the seal is a silhouette of the state of North Carolina. Inside the southern part of the state silhouette, there is a detailed image of a solar tower (heliostats) reflecting light, set against a sunset or sunrise sky with orange and yellow hues.

- Several Counties have developed solar ordinances that require a decommissioning plan in order to obtain a special use permit and meet local zoning requirements.
- Decommissioning included in the Model Solar Ordinance developed by NC Clean Technology Center
- The Commission has not previously required that a decommissioning plan be included in an application for a CPCN

Contact Information



North Carolina Utilities Commission

<http://www.ncuc.net>

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